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REMARKS

1. The Office Action lists the pending claims as 46-53. This is incorrect. Applicants' amendment dated February 6, 2006 added Claims 54-61, so the pending claims were 46-61. Claims 54-61 have not been examined. Examination of all the pending claims and issue of a new non-final Office Action is respectfully requested (see MPEP 707, 707(i)).

2. Claims 46, 48-53 were rejected under 35 USC 102(b) over U.S. paten no. 6,399,178 to Chung et al. The rejection also appears to apply to Claim 47 (see Office Action, page 3, second paragraph).

Claim 49 has been re-written as independent. Claim 49 recites "placing solder paste into the one or more openings" in a dielectric.

The Examiner states that Chung discloses "placing solder paste (34) into the one or more openings (14)". The Examiner refers to Chung's Figs. 4-7 and column 10, line 54 through column 11, line 18.

This is respectfully traversed. Chung's Figs. 4-7 teach the following sequence:

A. Deposit solder paste on contact pads 32, then heat the solder paste to melt the solder and form solder bumps 34 (Fig. 4 and column 10, lines 61-66).

B. After forming the solder bumps 34, insert the solder bumps into holes 14 of underfill preform 10 (Fig. 5 and column 11, lines 14-18).

Thus, the solder paste is first heated to melt the solder and form the solder bumps, then the solder bumps are placed into holes 14. The solder paste is never placed into the holes itself as in Claim 49.

Claim 57 has been re-written as independent, and is believed to be allowable for similar reasons.

Claims 46 and 54 have been canceled. Each of Claims 47-48, 50-53, 55-56, 58-61 depends on one of Claims 49, 57.

3. New Claims 62, 63 depend from respective Claims 49, 57. These claims are supported by the specification, page 11, lines 27-29.¹

4. New Claim 64 recites, "the first contact pad occupies a first portion of the bottom surface of the first opening but does not occupy a second portion of the bottom surface of the first opening". This recitation is supported by Figs. 16A, 16B.

Claim 64 also recites, "placing solder on the first substrate, the solder being located in each of the one or more openings, wherein said solder is not placed on the first substrate before the forming of the dielectric on the first substrate". This recitation is supported by the specification, page 11, lines 27-29.

In Chung's Figs. 4-7, the solder is placed on contact pads 34 on substrate 30 (Fig. 4) before forming the perform 10' with openings 14 on the substrate (Fig. 7), which is the opposite of Claim 64.

Claims 65-69 depend from Claim 64.

5. New Claim 70 is supported by the applicants' Fig. 17 and specification, page 19, lines 15-20. The top surface of contact pad 350 in Fig. 17 has a first conductive portion (layer 910.2) and a second conductive portion (portion of layer 910.1 which is not covered by layer 910.2). Layer 910.1 is less solder wettable than layer 910.2 (page 19, lines 17-18).

Chung does not teach or suggest a contact pad with different portions having different solder wettability as recited in Claim 70.

Claims 71-76 depend from Claim 70.

¹ The claims are not limited to the applicants' disclosure portions discussed herein.

Any questions regarding this case can be addressed to the undersigned at the telephone number below.

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